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**HSE**  
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Human Capital  
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МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ

**ФОРСАЙТ И НАУЧНО-ТЕХНИЧЕСКАЯ  
И ИННОВАЦИОННАЯ ПОЛИТИКА**

НИУ ВШЭ, МОСКВА, РОССИЯ



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# **Are North American Clusters transitioning to Clean technologies?**

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**ANNUAL INTERNATIONAL ACADEMIC CONFERENCE FORESIGHT & STI POLICY  
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# Bio

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2020 - Present – Post-Doctoral Researcher, Karelian Institute, University of Eastern **Finland**

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2019 - 2020 – Research Fellow, School Sant 'Anna of Advanced Studies - **Italy**

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2019 – Research Associate, University of Sheffield – **United Kingdom**

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2018 – Post-Doc Research Fellow, University of Victoria – **Canada**

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2018 – Visiting Scholar, Western Washington University – **United States**

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2017 – Visiting Scholar, San Diego State University – **United States**

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2016 – PhD Graduation, University “Mediterranea” Reggio Calabria - **Italy**

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2015 – Visiting Scholar, Northeastern University – **United States**



# Context and premises

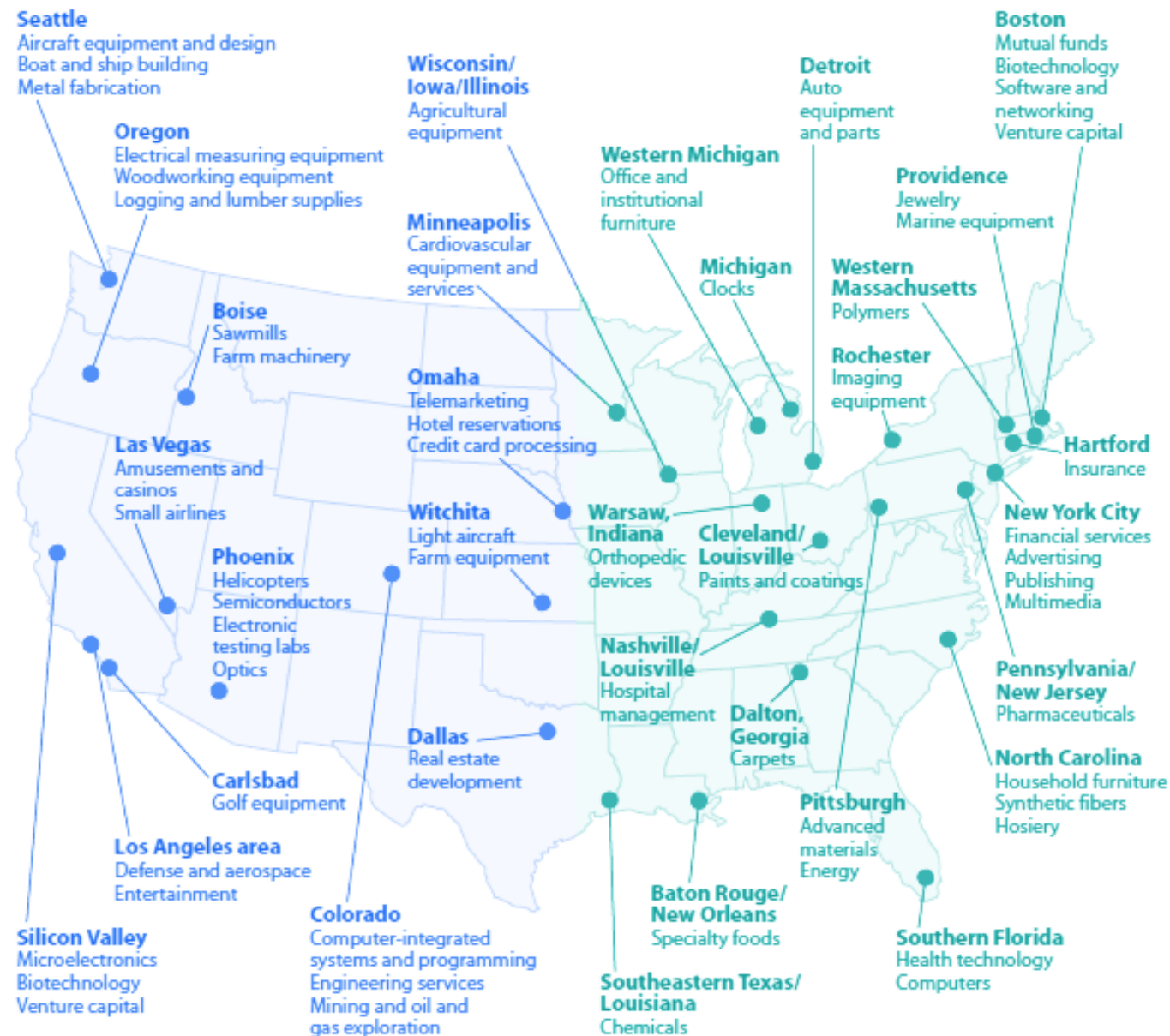
- Cluster Porterian definition
- Regional scale
- Territorial competitiveness
- Policy approach





# Clusters in United States

Source:  
<https://clustermapping.us/content/clusters-101>





# Canada Supercluster Initiative

Digital  
Technology

Protein  
Industries

Advanced  
Manufacturing

Scale AI

Ocean



# Policy turn round

- Broader understanding of innovation (Tödtling & Trippl, 2018; Coenen & Morgan, 2020)
- Innovation should be geared to tackle societal challenges (Weber and Rohracher 2012; Mazzucato and Perez 2015; Tödtling and Trippl 2018; Flanagan)
- Innovation policy should target transformative change (Schot and Steinmueller 2018; Fagerberg, 2018)
- Policy should not be «*neutral*» to the content of innovation (Tödtling, Trippl, and Desch, 2021)



# Definitions

- Clusters are defined as **territorially anchored groups of independent organisations engaging in joint decision-making**, pursuing system-level goals and capable of purposive collective action.
- **Transition towards sustainable technologies**, where green technologies are intended for mitigating, eliminating or reversing the environmental impact of economic activities





# Research Scope

- This research aims at unpacking the role of **'organised' clusters as 'agents of change'**
- I adopt the "cluster meta-organizations" approach to discuss the collective activities to bolster transition toward Clean Technologies



# Gaps in Knowledge

- The “directionality” where cluster businesses are heading to remains an under investigated aspect in research;
- The role of cluster secretariats to drive sustainable transitions;
- The rationale to “orient” cluster members toward sustainability;
- The rationale to adhere to clean technologies cluster meta-organizations;



# Research Design

Policy Support toward  
Clean Technologies in  
North America

Rationale to orient cluster  
members to engage with  
Clean Technologies

The role of cluster  
secretariats to support  
Clean Technologies in  
North America

Cluster governance  
collective decisions,  
targets, rewards

Rationale of firms to engage  
with Clean Tech cluster  
meta-organizations



# TOPICS

- The policy support from different levels of governments.
- The rationale to “orient” cluster firms toward more sustainable industry sectors.
- The rationale to adhere to clean technologies cluster meta-organizations.
- Cluster organization
- The hindrances encountered to switch from dirty technologies to clean and renewable ones.



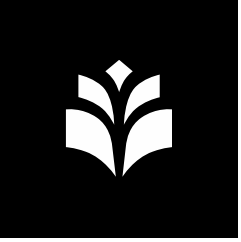
# Policy Support





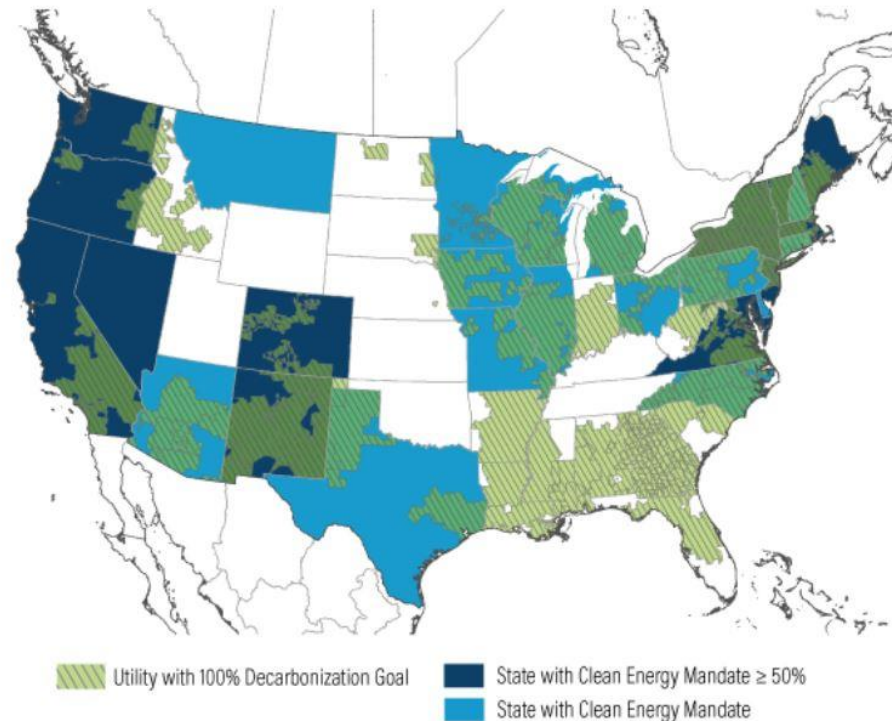
# Policy Support

- Is the policy climate supportive to implementing green technologies of economic activities? Local, regional, national?
- If this change is the result of government/nonprofit/private sector collaboration, how did it come about?
- During the last 3 years, has this policy support changed significantly?



# Policy Support to Clean Technologies in United States

U.S. States with Clean Electricity Mandates & Utilities with Decarbonization Goals, 2021

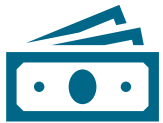


Source: WRI and Smart Electric Power Alliance.  
Updated on January 27, 2021.

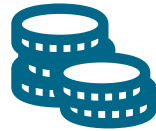
 WORLD RESOURCES INSTITUTE



# Policy Support



R&D Funding



Commercialisation  
funding



National Research  
Institutions



Emission target



Multi-level  
Governance



# The rationale to “orient” cluster firms toward more sustainable industry sectors

Insights from North-American cluster meta-  
organizations



# Why orienting firms to clean tech?

*“Originally our organization was funded upon the **concern of global warming**. Founding members were businessmen. They saw business opportunities to move towards sustainability. Many of our organizations are for profit, just a few are non-profit organizations. The economic rationale was very clear since the beginning. It is a matter of mentality. **Money talks**, so it worked to create better jobs in green growth.”*

*“Ten years ago it was mainly a matter of ideology (protect the climate, the environment). ”*

*“[sustainable] economic development means also job development. High-tech means well-paid job positions that are pursued by local politicians. Therefore, they are interested to support the spread of new green technologies”*



# **The rationale to engage in cluster meta-organizations**

Is it for brand reputation?



# The rationale to “orient” cluster firms toward sustainability

- Why do you engage in orienting economic activities within your clusters toward green technologies?
- Is it mainly an economic rationale behind this choice?
- Is it driven to take advantage of a wider demand for green technologies from consumers?
- Is it driven to showcase companies' commitment to environmental goals (Brand reputation)?
- Concerns about global warming?



## Why adhere to Clean Technologies cluster meta-organizations?

Corporate Social Responsibility

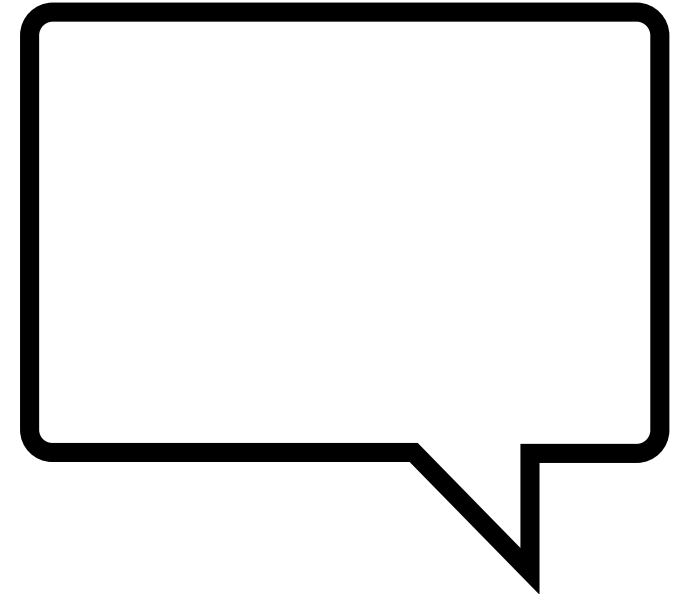
Global Warming

Economic interest

Funding

Policy advocacy

Market Analysis



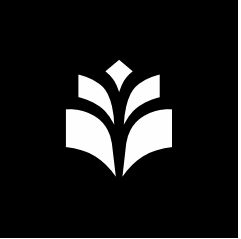


# Why adhere to Clean Technologies cluster meta-organizations?

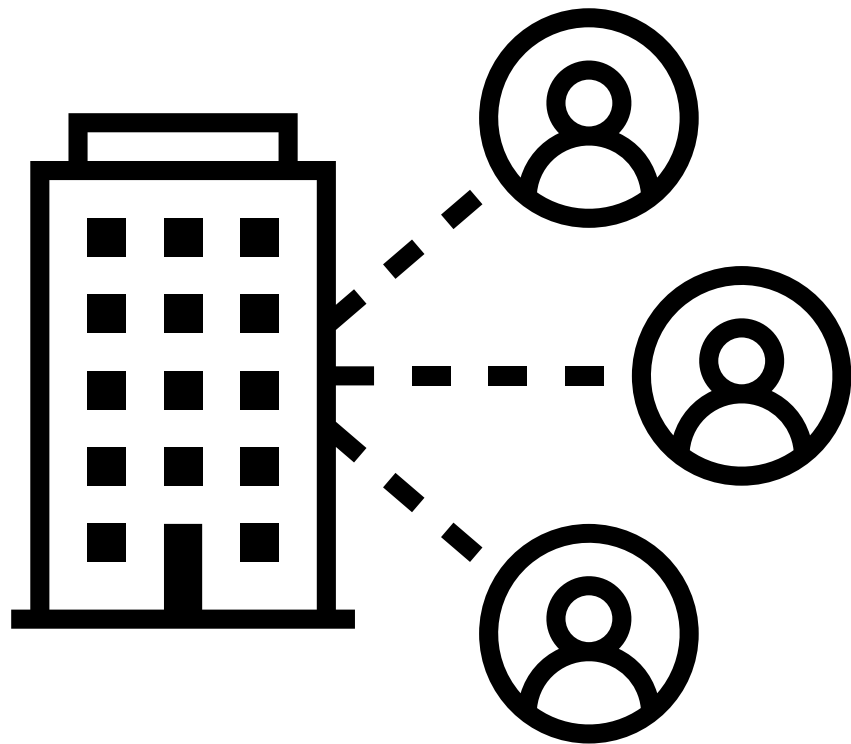
*“at the beginning, some of the companies understood that if they took leadership, they could benefit also for their brand reputation. Now if the companies don’t show up any commitment, they get damaged”*

*“following the example of TESLA, many smaller companies have reaped the benefits of entering into the stock market with green technology-based business. The **equity markets** have opened up an additional avenue for green business financing. Because of the value to their brand reputation, we have a lot of companies investing in green technologies that have not really done so before. For instance banks and investment funds are increasing their investments in green-technologies-based companies. Additionally, we see increased venture capital and social impact capital flowing into cleaner and greener companies”*





# Cluster meta-organization governance





# Cluster Organization

- Can you comment on the way decisions are negotiated by the cluster actors?
- Is the implementation of green technologies compulsory across cluster members?
- Is the implementation of green technologies monitored across cluster members?
- If YES, by which means?





# Role of cluster meta-organization

Business  
match making

Network

Lobby

Policy  
advocacy

Support to file  
grant  
applications

Support to  
select R&D  
projects

Dissemination  
of funding  
opportunities



# Role of cluster meta-organizations

*“we help to **connect** partners. For instance, one insect-farming company is working to produce a less water-intensive food product. This company is working along with a data center, to use the heat produced by the data center to help the insect farming process”*

*“a wide number of opportunities develop behind the scenes, where businessmen mentor each other. In Seattle, there is a strong business network, where the **collaborative culture** is quite shared. Members help each other”*

*“we work as **cheerleader**, anytime we see any interesting project, we send information to our members”*

*“we act as a **convener**, inviting its members to file applications through the agency dedicated to fund clean technologies projects”*





# Conclusions

- cluster secretariats work at the intersection between public and private sectors, favouring communication in both directions: influencing law-making processes and sharing funding opportunities with private stakeholders. Furthermore, they act as brokers to favour business opportunities among their members.
- Although prompting a stark “directionality” towards Clean Technologies, they don’t set any compulsory threshold or target that cluster members have to reach as their nature is collaborative and inclusive.



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**Thank you**  
**благодарю вас**

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